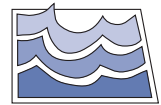




U.S. Army
Corps of
Engineers
St. Paul District

DEVILS LAKE EMERGENCY OUTLET NEWSLETTER

Issue #3 October 1998



North Dakota
State Water
Commission

Corps Conducting Wide Range of Studies as Final Scoping Document Nears Completion

Scoping Document Update

The Scoping Document identifies the issues to be addressed in the Devils Lake Emergency Outlet Environmental Impact Statement (EIS). The draft Scoping Document was mailed in July 1998 to everyone on the Army Corps of Engineers (Corps) mailing list (approximately 1,000 people). It was also placed in public libraries throughout the study area. The public had an opportunity to comment on the draft Document during the 30-day comment period which ended on August 28, 1998. The Corps received about 20 comments from the public and government agencies, and is currently finalizing the Document based on these comments. The final Scoping Document is scheduled for release in Winter 1998.

In the meantime . . .

In addition to analyzing public comments and finalizing the Scoping Document, Corps staff members have also been conducting or overseeing a wide variety of studies associated with the Devils Lake Emergency Outlet Project. The need for these studies was identified by the Corps and through agency input and public scoping. The results of these studies will be used by the Corps in the preparation of the EIS, the design of the project, and the Report to Congress on the emergency outlet. For more information about these studies, contact the people listed on the back page of this newsletter.

The purpose of each study is briefly described below.

Studies Recently Completed

Devils Lake Water Level and Quality Model

The U.S. Geologic Survey (USGS) has developed a lake level probability computer model. They also collected water quality data in Devils Lake and downstream (the Sheyenne and Red Rivers) in order to simulate probable future conditions in the lake with and without an outlet. The model examines both lake level and bay-by-bay water quality. The simulated emergency outlet releases generated by the USGS model are used in another model that analyzes potential downstream water quality and quantity effects from outlet operation.

Climate Study

The Regional Weather Information Center (RWIC) of the University of North Dakota analyzed climatological cycles for input to the USGS model described above. The RWIC results were used to adjust the lake level and water quality model for the recent wetter-than-normal trend.

HEC-5/5Q Model for Downstream Water Quality

This computer model, developed by the Corps, assessed flows and water quality on the Sheyenne and Red Rivers with and without an outlet, based on the output of the USGS lake model described above. Water quality parameters covered by the model include total dissolved solids (TDS), sulfate, phosphorus, and hardness.

Cultural Resource Surveys

The Corps contracted for several surveys to identify known existing cultural resources. A literature search was conducted for the entire basin and the Sheyenne River in 1997 by The 106 Groups Ltd. A field survey was conducted of the proposed Peterson Coulee outlet route in 1998 by Burns and McDonnell. Any sites along the proposed Peterson Coulee outlet route that could be impacted by outlet construction would be tested for their eligibility for the National Register of Historic Places.

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Studies Recently Completed

(continued)

Economic Studies

Watts & Associates and Barr Engineering updated the structural and transportation damage survey originally compiled in the mid-1980s. The results from these studies were incorporated in an analysis of infrastructure protection measures and emergency outlet cost-effectiveness under various lake level scenarios.

Virtual Flood Model

The Institute for Water Resources (IWR) adapted the USGS lake level model to show the relationship between outlet operation, upper basin storage, and lake levels for several different “futures.” The Energy and Environmental Research Center hosted a virtual flood workshop at the University of North Dakota in March 1998.

Groundwater Analysis

Barr Engineering completed a review of groundwater information in the Sheyenne Delta area to analyze whether increased river stages could affect groundwater levels.

Conductivity Monitoring

In 1997 and 1998, the USGS monitored conductivity, which reflects the level of total dissolved solids (TDS) and sulfates, along the Sheyenne and River Rivers below Lake Ashtabula.

Flood Insurance Study

The Corps, USGS, and the Federal Emergency Management Agency (FEMA) conducted Flood Insurance Studies around the lake in Ramsey and Benson Counties to identify the flood boundary for the long-term regulatory flood elevation.

Natural Resources Baseline Conditions

The U.S. Fish and Wildlife Service reviewed the literature and collected baseline information for natural resources in the Devils Lake basin and downstream. This includes vegetation distribution, fisheries, wildlife, water resources, public lands, and threatened and endangered species.

Outlet Route Topographic Surveys and Mapping

Wolpert Consultants and Horizons Incorporated conducted land surveys and prepared 2-foot contour topographic maps for the proposed Peterson Coulee outlet route.

Aerial Photography and Satellite Imagery

The Corps acquired aerial photography of the proposed Peterson Coulee outlet route and the Devils Lake basin, and obtained satellite imagery of the Devils Lake basin, Sheyenne River, and Red River.

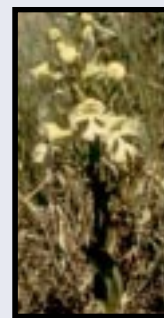
Location of Natural Features

A list of rare species, natural areas, and scientific areas located in the Devils Lake basin and along the Sheyenne and Red Rivers was provided by the North Dakota Parks and Recreation Department and Minnesota Department of Natural Resources.

National Wetlands Inventory (NWI) Data

The Corps obtained NWI data from the U.S. Department of the Interior and North Dakota State Water Commission (NDSWC) for the entire Devils Lake basin and downstream areas to identify the location of wetlands.

Western prairie fringed orchid, a threatened species found in low native grasslands and in wetland areas in North Dakota



Spirit Lake Nation Studies

The Corps contracted for a number of studies associated with the Spirit Lake Nation: Barr Engineering prepared an alternatives assessment (road raises, levees, etc.), including an economic analysis for the Spirit Lake Nation; Kadrmas, Lee and Jackson surveyed along a prospective levee alignment for Mission Township; and STS Consultants conducted a preliminary contamination assessment of the effects of lake rises on groundwater contamination and infrastructure (pipes, wells, etc.).

Bioassay Study

AsCi Corporation conducted a bioassay of selected species and water from Devils Lake and the Sheyenne River to determine any toxicity and whether test species will be impacted by predicted discharges of Devils Lake water.

Upper Basin Storage Routing

Barr Engineering assessed runoff losses in the Devils Lake basin between the point of origin and Devils Lake. Another goal of the study was to determine if upper basin storage cost-effectiveness varied with location within the basin.

Studies in Progress

Algae Study

North Dakota State University (NDSU) is conducting an algae study in Devils Lake, the Sheyenne River, and Lake Ashtabula. The study will correlate water quality with algae, phytoplankton, and periphyton and establish baseline conditions.

Natural Resource Evaluation of Emergency Outlet

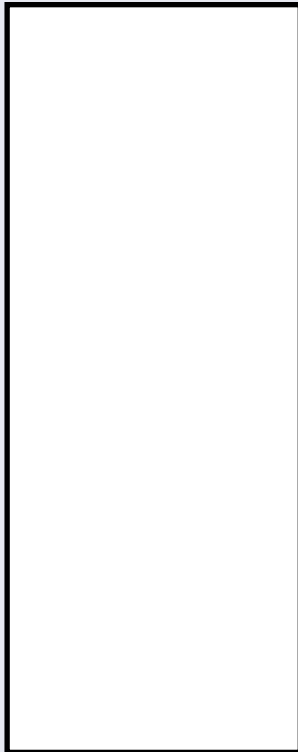
The U.S. Fish and Wildlife Service is preparing a Coordination Act Report for the emergency outlet study addressing the existing conditions, impacts, and potential mitigation for natural resources.

Erosion Study

Earth Tech/Rust is establishing a baseline for existing erosion conditions along the Sheyenne River.

Aquatic Habitat Study

Earth Tech/Rust is conducting habitat analysis at various locations along the Sheyenne River to collect baseline information on aquatic habitat.



Technical crews from Earth Tech/Rust and Enviroscience collect hydraulic cross-section data for the erosion and habitat studies on the Sheyenne River

Orchid Analysis

The Corps is coordinating with the U.S. Fish and Wildlife Service to assess whether any impacts to the groundwater due to the project will in turn adversely affect the western prairie fringed orchid, a federally threatened species.

Upper Basin Management Information

The Corps is obtaining information from various agencies on the effects of upper basin management activities on infiltration and runoff. This would be used to assess the effects on lake levels.

Groundwater Analysis

The USGS is establishing groundwater monitoring wells along the Sheyenne River. The purpose of this study is to determine effects on groundwater levels.

Advanced Planning for Emergency Outlet

Barr Engineering is reviewing the Corps' conceptual plans for the emergency outlet. In a second phase, Barr is developing detailed designs of the Peterson Coulee all-pipeline outlet and exploring construction procedures.

Regional Economic Development

A study of local and regional economic effects of the proposed Peterson Coulee outlet is being conducted by professors from NDSU. The purpose of this study is to provide information about the regional economic development (RED) effects of the emergency outlet to supplement the National Economic Development (NED) analysis used to determine federal interest.

Downstream Surface Water Users

Barr Engineering is identifying surface water users along the Sheyenne and Red Rivers in Minnesota and North Dakota to determine how they use the water, how use of the water would be impacted by the proposed Peterson Coulee outlet, and to evaluate potential mitigation measures.

Vegetation Mapping

The Corps will conduct vegetation mapping for the proposed Peterson Coulee outlet route and riparian areas along the Sheyenne and Red Rivers.

Sediment Analysis

The Corps will analyze sediment samples from selected soil boring sites along the proposed Peterson Coulee outlet route and the pump station intake channel for construction purposes and to determine if any hazardous substances are present. Barr Engineering has also conducted a hazardous, toxic, and radioactive waste assessment along the proposed Peterson Coulee outlet route.

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Studies in Progress

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Socio-Economic Impact Assessment

Gulf Engineering and Consultants is analyzing economic, institutional, social and regional impacts for the Devils Lake basin and downstream areas.

Spirit Lake Nation Tribal Liaison

Al Nygard Consulting will serve as a tribal liaison to help coordinate between the Corps and Spirit Lake Nation.

Biota Transfer

The Corps is conducting a literature search of biota in Devils Lake, and the Sheyenne and Red Rivers.

Public Involvement/Scoping Process

Earth Tech/Rust is helping to conduct the public involvement and scoping process for the Devils Lake emergency outlet study.

Independent Technical Reviews

The St. Paul District of the Corps has contracted with the Hydrologic Engineering Center and Colorado State University to conduct an independent assessment of the methodology, assumptions, and analysis of the USGS lake level model and HEC-5/5Q model. A similar review of the economic studies is being contracted to Virginia Polytechnic Institute and University and the Corps' Vicksburg District.

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